

**CURRICULUM VITAE**  
**Katherine Ann Willyard**

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**January 2019**

**ACADEMIC DEGREES**

Ph.D. 2019 Texas A&M University, Department of Sociology  
(Dissertation Defense Scheduled for February 26, 2019)

Dissertation: “The Effects of Organizational, Community, and State Regulatory Characteristics on Oil and Gas Extraction Facility Venting and Flaring Practices”

Committee: Dr. Theresa Morris, Department of Sociology (Chair)  
Dr. Arthur Sakamoto, Department of Sociology  
Dr. Mary Campbell, Department of Sociology  
Dr. Daniel Goldberg, Department of Geography

2017 Funded by National Science Foundation Doctoral Dissertation Research Improvement (NSF-DDRI) Grant, [SES-1702683](#)

2017 Received Dissertation Mentorship with Dr. Randy Becker, Principal Economist, and Special Assistant to the Chief Economist, Center for Economic Studies, United States Census Bureau

M.S. 2014 Texas A&M University, Department of Sociology

Dissertation: “Politics and Power: The 1992 Israeli Loan Guarantees”

Committee: Dr. Harland Prechel, Department of Sociology (Chair)  
Dr. Joseph Jewell, Department of Sociology  
Dr. Michelle Taylor-Robinson, Department of Political Science

B.S. 2008 Texas A&M University, Department of Sociology

**GRADUATE CERTIFICATES**

2015 Geographic Information Systems, Texas A&M University, Department of Geography and Department of Ecosystem Science and Management

2012 Nonprofit Management, Texas A&M University, Bush School of Public Service

## **RESEARCH AND TEACHING INTERESTS**

Social Problems, Environmental Sociology, Research Methods, Spatial Demography

## **PROFESSIONAL EMPLOYMENT RECORD**

2019 – present            Research Assistant, Hazard Reduction and Recovery Center

2015 – present            Research Assistant, Texas Federal Statistical Research Data Center

2015                        Instructor of Record (Social Problems), Texas A&M University

2014                        Graduate Research Assistant, Texas A&M University, Sociology

2012 – 2014              Academic Advisor, Texas A&M University, Sociology

2011 – 2102              Advising Intern, Texas A&M University, International Student Services

## **PEER REVIEWED PUBLICATIONS**

### **Journal Articles**

2019    Katherine Ann Willyard. “The Organizational Political Economy of the Environment and Changes in Texas Oil and Gas Flaring Regulations from 1889-1990,” *Energy Policy* 128: 639-647 <https://doi.org/10.1016/j.enpol.2019.01.046>

### **Manuscripts in Progress**

Katherine Ann Willyard. “Wasting Natural Resources: A Quantitative Analysis of Texas Oil and Gas Venting and Flaring Practices” (Revise and Resubmit at *Energy Research & Social Science*)

Katherine Ann Willyard. “Variations in Facility Production of and Community Exposure to Texas Oil and Gas Venting and Flaring” (Under Review)

Katherine Ann Willyard and Gunnar Schade. “Flaring in Two Texas Shale Areas: Comparison of Bottom-up and Top-down Volume Estimates from 2012 to 2015” (Under Review)

Katherine Ann Willyard. “Do Subsidiaries Engage More Heavily in Methane Producing Activities by the Oil and Gas Industry? A Quantitative Analysis of Texas Oil and Gas Venting and Flaring Volumes” (Results using Restricted Data Disclosed by the United States Census Bureau; Revising Paper for Publication)

Megan Augustyn, and Katherine Ann Willyard. “Contextual Influences on Help-Seeking Behavior for Intimate Partner Violence” (Results using Restricted Data Disclosed by the United States Census Bureau; Revising Paper for Publication)

## **OTHER PUBLICATIONS**

### **Op-Ed Articles**

- 2017 Katherine Ann Willyard. "The Need for Better Texas Oil and Gas Industry Regulatory Data," *Texas Tribune* <https://www.tribtalk.org/2017/05/17/the-need-for-better-texas-oil-and-gas-industry-regulatory-data/>

### **Web Applications**

- 2017 Katherine Ann Willyard. "Texas Community Exposure to Oil and Gas Facility Venting and Flaring Practices in 2012"  
<http://tamu.maps.arcgis.com/apps/webappviewer/index.html?id=05ba58ab4ef1441389289d34395d3587>

### **Data Products**

- 2017 Katherine Ann Willyard. "The Relationship Between Organizational, Community, and State Regulatory Characteristics and Texas Oil and Gas Extraction Facility Venting and Flaring Practices," Inter-University Consortium for Political and Social Research  
<http://doi.org/10.3886/E101192V1>
- 2018 Katherine Ann Willyard. "Texas County Oil and Gas Production, Venting, and Flaring Volumes," Inter-University Consortium for Political and Social Research  
<http://doi.org/10.3886/E100901V1>

## **FEDERAL STATISTICAL CENSUS RESEARCH DATA CENTER (RDC) PROJECTS**

### **Active Research Projects**

- 2018 – 2023 Katherine Ann Willyard (PI). "Organizational Characteristics of Organizational Institutional Environments and Texas Oil and Gas Venting and Flaring Practices," TX 1758
- 2016 – 2019 Megan Augustyn (PI), and Katherine Ann Willyard. "Improving the Quality of the National Crime Victimization Survey and Police Public Contact Survey to Better Understand the Determinates of Help-Seeking Behavior Among Victims of Intimate-Partner and Sexual Assaults," TX 1392

### **Pending Research Proposals**

- 2018 Katherine Ann Willyard (Co-PI), Sarah Gatson (Co-PI), and Marissa Cisneros. "The Contextual Effects of Supplemental Nutrition Assistance Program Participation on Health Care Expenditures among Low-Income Adults," CFACT 472  
(Approved by the Agency for Health Care Research and Quality)

### **Research Proposals in Progress**

2018 Verna Keith (PI), Mark Fossett, and Katherine Ann Willyard. “Residential Segregation, Neighborhood Disadvantage and Allostatic Load”

### **Completed Research Projects**

2016 – 2018 Johnelle Sparks (PI) and Katherine Ann Willyard. “Examining the Impact of Segregation on Racial/Ethnic and Educational Differences in Allostatic Load Levels and Mortality Risks,” TX 1341

### **FUNDED GRANTS**

2017 – 2019 Katherine Ann Willyard (PI) and Theresa Morris (Project Director). National Science Foundation Doctoral Dissertation Research Improvement Grant, [SES-1702683](#), “The Effects of Organizational, Community, and State Regulatory Characteristics on Texas Gas Well Venting and Flaring Rates,” \$11,954

2018 Katherine Ann Willyard, and Sarah Gatson. Seed Grant, Texas Federal Statistical Research Data Center, “The Contextual Effects of Supplemental Nutrition Assistance Program Participation on Health Care Expenditures among Low-Income Adults,” \$4,250

2018 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Undergraduate Corporate Structure Data Collection and Training,” \$900

2017 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Texas Railroad Commission Digital Map and API Data Purchase,” \$3,082

2016 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, “Texas Railroad Commission Drilling Permit, Production Data, and Regulatory Data Purchase” \$4,135

2015 – 2016 Katherine Ann Willyard. Texas A&M University Melbern G. Glasscock Center for Humanities Research Graduate Research Fellowship Program, “Archival Research on the Historical Development of Texas Railroad Commission Venting and Flaring Regulations,” \$2,000

2015 Katherine Ann Willyard. Texas A&M University, College of Liberal Arts, Professional Development Support Award, “Longitudinal Data Analysis Workshop,” \$2,337

- 2015 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, "Texas Railroad Commission Programmed Data Purchase," \$765
- 2011 Katherine Ann Willyard. Texas A&M University, Department of Sociology, Graduate Research Award, "Archival Research on the Development of United States Loan Guarantee Policy," \$600

## **AWARDS**

- 2018 Exxon Mobil Best Oral Presentation Award for the presentation "Flaring in Two Texas Shale Areas: Comparison of Bottom-Up and Top-Down Volume Estimates from 2012 to 2015," \$500
- 2018 Rural Sociological Society Graduate Student Paper Award- Natural Resources Research Interest Group for the article, "Who Is Burning Money and Throwing It In the Air?: A Quantitative Analysis of Disproportionality of Texas Oil and Gas Venting and Flaring Practices in 2012," \$100
- 2017 United States Department of Commerce, Census Bureau, Center for Economic Studies Dissertation Mentorship, Mentor is Dr. Randy Becker, Principal Economist and Special Assistant to the Chief Economist
- 2017 Texas A&M University GIS Day Paper Completion, 2<sup>nd</sup> Place Award for the paper "Comparing Block Group and Facility Analysis of Disproportionate Community Exposure to Texas Oil and Gas Venting and Flaring Practices in 2012," \$100
- 2015 Texas A&M University Graduate Teaching Academy, Academy for Future Faculty Fellowship
- 2014 International Interdisciplinary Social Sciences Graduate Scholar Award, \$500
- 2011 Southwestern Social Science Association, Best Graduate Presentation- Visual Sociology for the display "Separation Barriers," \$100

## **SCHOLARSHIPS**

- 2014 Texas A&M University, Texas Aggie Graduate Grant, \$1,500
- 2011 Texas A&M University, Bush School of Public Service, Online Student Scholar Award, \$1,000
- 2011 Texas A&M University, Department of Sociology, Academic Recognition Scholarship, \$1,000

## **PRESENTATIONS**

## Papers Presented at Conferences

\* Undergraduate student collaborator

2018 Katherine Ann Willyard, Nina Canal\*, Angelina Dumlao\*, Miranda Hooper\*, William Thompson\*, and Gunnar Schade. "Estimation of Texas Flaring and Venting Volumes from upstream Oil and Gas Facilities Using Texas Railroad Commission Reports and National Oceanic and Atmospheric Administration Satellite Imagery, 2012-2015," Presented at the Annual Texas A&M Conference on Energy\*

\*Awarded the Exxon Mobil Best Oral Presentation Award, \$500

2018 Megan Augustyn, and Katherine Ann Willyard. "Improving the Quality of the National Crime Victimization Survey and Police Public Contact Survey in order to Better Understand the Determinates of Help-Seeking Behavior among Victims of Intimate-Partner Violence and Sexual Assaults," Presented at the Annual Federal Statistical Research Data Center Annual Research Conference

2018 Katherine Ann Willyard. "Disproportionalities in Facility Production of and Community Exposure to Oil and Gas Venting and Flaring," Presented at the American Sociological Association Annual Meeting, Innovative Perspectives on Environmental Justice Paper Session

2018 Katherine Ann Willyard. "Who Is Burning Money and Throwing It in the Air?: A Quantitative Analysis of Disparities in Texas Oil and Gas Extraction Facility Venting and Flaring Practices in 2012," Presented at the Rural Sociological Society Annual Meeting

2017 Megan Augustyn, and Katherine Ann Willyard. "Contextual Influences on Help-seeking Behavior for Intimate Partner Violence," Presented at the American Society of Criminology Annual Meeting

2017 Katherine Ann Willyard. "Comparing Block Group and Facility Analysis of Disproportionate Community Exposure to Texas Oil and Gas Venting and Flaring Practices in 2012," Presented at Texas A&M GIS Day\*

\*Received 2<sup>nd</sup> Place Paper Presentation Award, \$100

2017 Katherine Ann Willyard. "Community Exposure to Texas Gas Well Venting and Flaring Emissions in 2012," Presented at the Southwestern Social Science Association Annual Meeting

2016 Harland Prechel, and Katherine Ann Willyard. "Organizational Political Economy and Greenhouse Gas Emissions: A Multilevel Analysis of the United States Energy Sector," Presented at the Annual Federal Statistical Research Data Center Annual Research Conference

2015 Katherine Ann Willyard. "Corporate-State Relations and State Environmental Policy: A Historical Study of Texas Flaring Regulations, 1930-2013," Presented at the American Sociological Association Annual Meeting, Environmental Sociology Round Table Session

2014 Katherine Ann Willyard. "Understanding United States Foreign Policy in the Middle East: The 1992 Israeli Loan Guarantee Showdown," Presented at the International Interdisciplinary Social Science Conference Annual Meeting\*

\*Received the International Interdisciplinary Social Sciences Graduate Scholar Award, \$500

2014 Katherine Ann Willyard. "The 1992 Israeli Loan Guarantees: A Key to Understanding Political Power in the United States' Middle East Foreign Policy," Presented at the Southwestern Social Science Association Annual Meeting

### **Posters Presented at Conferences**

2011 Katherine Ann Willyard. "Separation Barriers," Presented at the Southwestern Social Science Association Annual Meeting\*

\*Awarded the Visual Sociology Best Graduate Presentation, \$100

### **Invited Lectures**

2018 Ernesto Amaral, and Katherine Ann Willyard. "Introduction to Bayesian Models Using Stata," Presented at the Texas Federal Statistical Research Data Center

2017 Katherine Ann Willyard. "Graduate Student Dissertation Research in a Federal Statistical Research Data Center (FSRDC): The Effects of Organizational Characteristics and the Characteristics of Organizational Institutional Environments on Texas Oil and Gas Venting and Flaring Practices," Presented at the Rocky Mountain Federal Statistical Research Data Center

2016 Katherine Ann Willyard. "Corporate-State Relations and State Environmental Policy: Texas Oil and Gas Flaring Regulations, 1890-2014," Presented at the Glasscock Center Library

### **COURSES TAUGHT AT TEXAS A&M UNIVERSITY**

#### **Instructor of Record- Full Responsibility**

2015	Spring	SOCI 316	Social Problems
	Summer	SOCI 316	Social Problems

### **Guest Lecturer**

2014 SOCI 230 Classical Sociological Theory “The Nature and Types of Social Theory”

2017 SOCI 335 Sociology of Organizations “Resource Dependence Theory”

### **SERVICE**

#### **Texas A&M University**

2018 Texas A&M Aggie Undergraduate Research Leader  
2012-2016 AT Mentors, College of Liberal Arts  
2013-2014 Diversity Committee, Department of Sociology, elected  
2012-2013 Sociology Club Advisor, appointed

### **STUDENTS SUPERVISED**

#### **Undergraduate Research Mentees**

Garrison Reed	Completed 2017
Nina Canal	Completed 2018
Angelina Dumlao	Completed 2018
Miranda Hooper	Completed 2018
William Thompson	Completed 2018

### **PROFESSIONAL AFFILIATIONS**

American Sociological Association  
Southwestern Social Science Association  
Rural Sociological Society

### **RESEARCH SKILLS**

#### **Research Ethics**

Data Stewardship Training  
Title 26 Awareness Training

#### **Facilitating Large Restricted Federal Data Analysis**

Administered 1900, 1910, 1920, 1930, and 1940 IPUMS- USA 100% count micro-level Census data files located at Texas A&M University  
Currently granted Special Sworn Status (SSS) by the United States Census Bureau  
Managed and analyzed restricted business, community, health and crime data available at a Federal Statistical Research Data Center



## **Research Methods**

Archival research  
Bayesian spatial modeling with R-INLA & MCMC  
Content analysis  
Contextual analysis  
Difference-in-difference estimation  
Econometric models for dealing with excess zeros  
Econometrics for experimental economics  
Focus groups  
Generalized linear mixed modeling for clustered and longitudinal data  
Historical comparative analysis  
Interviews  
K-Nearest neighbor analysis  
Participant observation  
Program evaluations  
Spatial statistics  
Two-step multilevel analysis to deal with large level-two sample sizes

## **Statistical Software and Other Programming Skills**

ArcGIS  
ATLAS.ti  
Qualtrics  
Python  
R  
Stata  
SAS  
VBA  
HTML  
SQL

## **ADMINISTRATIVE AND TEACHER TRAINING**

### **Diversity and Inclusiveness**

Building a Community of Respect in the Classroom  
Enhancing Teaching and Learning for All Students with Universal Design and Technology  
Working with Students with Disabilities

### **Communication**

Assertiveness Training  
Interpersonal Communication Skills  
Understanding Communication Styles  
Working in a Team Environment

## **Teaching**

Effective Exam Item Creation  
High Impact Practices and Measuring Effectiveness  
Humanizing Education, Learning, and Leadership On/Offline  
Metacognition  
Questioning Skills and Techniques  
Strategies to Promote Active Learning  
Technology Enhanced Approaches for Engaging Students in Large Classes  
Techniques in Lecturing  
The Six Pillars of Engagement  
Teaching College Writing

## **Advising**

Fundamentals of Managing Departmental Records  
Goal Setting  
Intrusive Academic Advising: An Effective Strategy to Increase Student Success  
Organizational Alignment and Culture

## **Student Safety**

Brutality 101- Bullying in Higher Education  
Emergency Preparedness  
QPR Suicide Prevention Gatekeeper  
Responding to Reports of Sexual Harassment  
Shots Fired on Campus